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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,710	03/17/2004	David M. Ziemann	14846-37	4813

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EXAMINER	
MORRISON, JAY A	

ART UNIT	PAPER NUMBER
2168	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/802,710	ZIEMANN ET AL.	
	Examiner	Art Unit	
	Jay A. Morrison	2168	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 December 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Re-open Prosecution

1. In view of the Amendment After-Final filed on 12/4/07, prosecution is hereby reopened. A new ground of rejection is set forth below.

To Avoid abandonment of the application, appellant must exercise one of the following two options:

1) File a reply under 37 CFR 1.111 (if this office action is a non-final) or a reply under 37 CFR 1.113 (if this office action is a final); or

2) File an Appeal.

Remarks

2. Claims 1-25 are pending.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zaki ("Efficiently Mining Frequent Trees in a Forest", SIGKDD 2002 Edmonton, Alberta, Canada, July 23-26, 2002.) in view of Makus et al. ('Makus' hereinafter) (Publication 2002/0059210).

As per claim 1, Zaki teaches

A method for navigating a collection of tree data structures stored in a computer-readable database, the method comprising: (see abstract)

constraining a first node of a query tree stored in a computer-readable memory to a first value; (scope list where "Item 1" is scoped within trees and subtrees, section 4, second paragraph; figure 4; note that query evaluation is disclosed in section 8, third paragraph)

making accessible a first set of nodes of the query tree that are connected to the first node constrained to the first value; (scope list where "Item 2" is scoped within trees and subtrees, section 4, second paragraph; figure 4)

constraining a second node in the first set of nodes to a second value; ("Item 2", section 4, second paragraph; figure 4)

identifying a plurality of distinct trees in the collection of tree data structures that contains (1) a first matching node equal in position to the first node and equal to the first value, and (2) a second matching node equal in position to the second node and equal to the second value; (in-scope test for finding candidates, section 4.2, "In-Scope Test" section; note: while this applies to subtrees, it is stated in section 3.1, "Case I" section, that sub-forests can be generated as well using the same principle although they are focusing on subtrees in their samples)

returning information related to the identified trees; (candidates, section 4.2, "In-Scope Test" section)

Zaki does not explicitly indicate "accessing data in a select node of the identified tree; and displaying the data in a select node of the identified trees".

However, Makus discloses "accessing data in a select node of the identified tree; and displaying the data in a select node of the identified trees" (access hierarchical structure for display with data in node displayed, paragraph [0067], lines 14-18).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Zaki and Makus because using the steps of "accessing data in a select node of the identified tree; and displaying the data in a select node of the identified trees" would have given those skilled in the art the tools to improve the invention by displaying the hierarchical relationships of the data accessed via the

search on a display screen. This gives the user the advantage of best identifying information of interest.

As per claim 2, Zaki teaches

the select node is the first matching node, the second matching node, or a node connected to the first or second matching nodes of the identified tree. (section 4, "Scope-List Representation" section; figure 4)

As per claim 3, Zaki teaches

making accessible a second set of nodes of the query tree that are connected to the second node constrained to the second value. (scope list where "Item 2" is scoped within trees and subtrees, section 4, second paragraph; figure 4)

As per claim 4, Zaki teaches

the select node is equal in position to the first node of the query tree, the second node of the query tree, or a node in the accessible first or second sets of nodes of the query tree. (section 4, second paragraph; figure 4)

As per claim 5, Zaki teaches

the first value and the second value are selected from the group consisting of a data value, an unbound special value, and an undefined special value. (section 1, second paragraph)

As per claim 6, Zaki teaches

a structure of the query tree is determined by available tree structures in the collection of tree data structures. (section 4, "Scope-List Representation" section; figure 4, "Database D of 3 Trees")

As per claim 7, Zaki teaches

In a computer system having a graphical user interface including a display device and one or more input devices, a method for navigating a collection of tree data structures stored in a computer-readable database, the method comprising: (see abstract)

receiving a first value from the one or more input devices to which a first node of a query tree stored in a computer-readable memory is constrained; (scope list where "Item 1" is scoped within trees and subtrees, section 4, second paragraph; figure 4; note that query evaluation is disclosed in section 8, third paragraph)

displaying with the display device a first set of nodes of the query tree that are connected to the first node constrained to the first value; (scope list where "Item 2" is scoped within trees and subtrees, section 4, second paragraph; figure 4)

identifying a plurality of distinct trees in the collection of tree data structures that contains a first matching node equal in position to the first node and equal to the first value; (in-scope test for finding candidates, section 4.2, "In-Scope Test" section; note: while this applies to subtrees, it is stated in section 3.1, "Case I" section, that sub-

forests can be generated as well using the same principle although they are focusing on subtrees in their samples).

returning information related to the identified trees. (candidates, section 4.2, "In-Scope Test" section)

Zaki does not explicitly indicate "and displaying with the display device data in a select node of the identified tree".

However, Makus discloses "and displaying with the display device data in a select node of the identified tree" (access hierarchical structure for display with data in node displayed, paragraph [0067], lines 14-18).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Zaki and Makus because using the steps of "and displaying with the display device data in a select node of the identified tree" would have given those skilled in the art the tools to improve the invention by displaying the hierarchical relationships of the data accessed via the search on a display screen. This gives the user the advantage of best identifying information of interest.

As per claim 8, Zaki teaches

the select node is the first matching node or a node connected to the first matching node of the identified tree. (section 4, "Scope-List Representation" section; figure 4)

As per claim 9, Zaki teaches

receiving a second value from the one or more input devices to which a second node in the first set of nodes is constrained; a second set of nodes of the query tree that are connected to the second node constrained to the second value. (scope list where "Item 2" is scoped within trees and subtrees, section 4, second paragraph; figure 4)

Zaki does not explicitly indicate "and displaying with the display device".

However, Makus discloses "and displaying with the display device" (access hierarchical structure for display with data in node displayed, paragraph [0067], lines 14-18).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Zaki and Makus because using the steps of "and displaying with the display device" would have given those skilled in the art the tools to improve the invention by displaying the hierarchical relationships of the data accessed via the search on a display screen. This gives the user the advantage of best identifying information of interest.

As per claim 10, Zaki teaches

identifying the tree identifies a tree in the collection of tree data structures that contains (1) a first matching node equal in position to the first node and equal to the first value, and (2) a second matching node equal in position to the second node and equal to the second value. (scope list where "Item 2" is scoped within trees and subtrees, section 4, second paragraph; figure 4)

As per claim 11, Zaki teaches

the select node is the first matching node, the second matching node, or a node connected to the first or second matching nodes of the identified tree. (section 4, second paragraph; figure 4)

As per claim 12, Zaki teaches

identifying the tree identifies a plurality of trees in the collection of tree data structures that contain (1) a first matching node equal in position to the first node and equal to the first value, and (2) a second matching node equal in position to the second node and equal to the second value, (scope list where "Item 2" is scoped within trees and subtrees, section 4, second paragraph; figure 4)

Zaki does not explicitly indicate "and wherein displaying the data in the select node displays data in a plurality of select nodes of each of the identified plurality of trees".

However, Makus discloses "and wherein displaying the data in the select node displays data in a plurality of select nodes of each of the identified plurality of trees" (access hierarchical structure for display with data in node displayed, paragraph [0067], lines 14-18).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Zaki and Makus because using the steps of "and wherein displaying the data in the select node displays data in a plurality of select nodes of each of the identified plurality of trees" would have given those skilled in the art the

tools to improve the invention by displaying the hierarchical relationships of the data accessed via the search on a display screen. This gives the user the advantage of best identifying information of interest.

As per claim 13, Zaki teaches

each of the plurality of select nodes are the first matching node, second matching node, or a node connected to the first or second matching nodes of the respective identified trees. (section 4, "Scope-List Representation" section; figure 4)

As per claim 14, Zaki teaches

each of the plurality of select nodes are equal in position to the first node of the query tree, the second node of the query tree, or a node in the first or second sets of nodes of the query tree. (section 4, second paragraph; figure 4)

As per claim 15,

Zaki does not explicitly indicate "displaying the data in the plurality of select nodes displays, with the display device, the data of the plurality of select nodes in a tabular format".

However, Makus discloses "displaying the data in the plurality of select nodes displays, with the display device, the data of the plurality of select nodes in a tabular format" (access hierarchical structure for display with data in node displayed, paragraph [0067], lines 14-18).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Zaki and Makus because using the steps of "displaying the data in the plurality of select nodes displays, with the display device, the data of the plurality of select nodes in a tabular format" would have given those skilled in the art the tools to improve the invention by displaying the hierarchical relationships of the data accessed via the search on a display screen. This gives the user the advantage of best identifying information of interest.

As per claim 16, Zaki teaches

Zaki does not explicitly indicate "displaying the query tree in a constraint pane, wherein the displaying of the first set of nodes is displayed in the constraint pane, wherein the displaying of the second set of nodes is displayed in the constraint pane, and wherein the displaying of the data in the plurality of select nodes displays the data in a data pane".

However, Makus discloses "displaying the query tree in a constraint pane, wherein the displaying of the first set of nodes is displayed in the constraint pane, wherein the displaying of the second set of nodes is displayed in the constraint pane, and wherein the displaying of the data in the plurality of select nodes displays the data in a data pane" (access hierarchical structure for display with data in node displayed, paragraph [0067], lines 14-18).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Zaki and Makus because using the steps of "displaying

the query tree in a constraint pane, wherein the displaying of the first set of nodes is displayed in the constraint pane, wherein the displaying of the second set of nodes is displayed in the constraint pane, and wherein the displaying of the data in the plurality of select nodes displays the data in a data pane" would have given those skilled in the art the tools to improve the invention by displaying the hierarchical relationships of the data accessed via the search on a display screen. This gives the user the advantage of best identifying information of interest.

As per claim 17, Zaki teaches

the first value and the second value are selected from the group consisting of a data value, an unbound special value, and an undefined special value. (section 1, second paragraph)

As per claim 18, Zaki teaches

a structure of the query tree is determined by available tree structures in the collection of tree data structures. (section 4, "Scope-List Representation" section; figure 4, "Database D of 3 Trees")

As per claim 19, Zaki teaches

A system for navigating a collection of tree data structures, the system comprising: (mining system, section 7, third paragraph)

a database component operative to maintain a database of tree data structures; and a processing component communicatively connected to the database component, the memory component, the input component, and the display component, the processing component programmed to perform actions comprising: interpreting a first signal from the input component as an instruction to constrain a first node of the query tree to a first value; constraining the first node of the query tree to the first value; (scope list where "Item 1" is scoped within trees and subtrees, section 4, second paragraph; figure 4; note that query evaluation is disclosed in section 8, third paragraph)

transmitting an instruction to the display component to display a first set of nodes of the query tree that are connected to the first node constrained to the first value; (scope list where "Item 2" is scoped within trees and subtrees, section 4, second paragraph; figure 4)

communicating with the database component to identify and return information related to a plurality of distinct trees in the database of tree data structures that contains a first matching node equal in position to the first node and equal to the first value; (in-scope test for finding candidates, section 4.2, “In-Scope Test” section; note: while this applies to subtrees, it is stated in section 3.1, "Case I" section, that sub-forests can be generated as well using the same principle although they are focusing on subtrees in their samples).

Zaki does not explicitly indicate “a memory component operative to store a query tree; an input component; a display component” nor “and transmitting an instruction to the display component to display data in a select node of the identified tree”.

However, Makus discloses "a memory component operative to store a query tree; an input component; a display component" (computing device, paragraph [0038], lines 10-12) and "and transmitting an instruction to the display component to display data in a select node of the identified tree" (access hierarchical structure for display with data in node displayed, paragraph [0067], lines 14-18).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Zaki and Makus because using the steps of "a memory component operative to store a query tree; an input component; a display component" and "and transmitting an instruction to the display component to display data in a select node of the identified tree" would have given those skilled in the art the tools to improve the invention by displaying the hierarchical relationships of the data accessed via the search on a display screen. This gives the user the advantage of best identifying information of interest.

As per claim 20, Zaki teaches

the select node is the first matching node or a node connected to the first matching node of the identified tree. (section 4, "Scope-List Representation" section; figure 4)

As per claim 21, Zaki teaches

interpreting a second signal from the input component as an instruction to constrain a second node in the first set of nodes to a second value; constraining the

second node to the second value; (scope list where "Item 2" is scoped within trees and subtrees, section 4, second paragraph; figure 4)

and transmitting an instruction to the display component to display a second set of nodes of the query tree that are connected to the second node constrained to the second value, wherein communicating with the database component a plurality of distinct trees in the database of tree data structures that contains (1) a first matching node equal in position to the first node and equal to the first value, and (2) a second matching node equal in position to the second node and equal to the second value. (in-scope test for finding candidates, section 4.2, "In-Scope Test" section; note: while this applies to subtrees, it is stated in section 3.1, "Case I" section, that sub-forests can be generated as well using the same principle although they are focusing on subtrees in their samples)

As per claim 22, Zaki teaches

the select node is the first matching node, the second matching node, or a node connected to the first or second matching nodes of the identified tree. (section 4, second paragraph; figure 4)

As per claim 23, Zaki teaches

the select node is equal in position to the first node of the query tree, the second node of the query tree, or a node in the first or second set of nodes of the query tree. (section 4, second paragraph; figure 4)

As per claim 24, Zaki teaches

the first value and the second value are selected from the group consisting of a data value, an unbound special value, and an undefined special value. (section 1, second paragraph)

As per claim 25, Zaki teaches

a structure of the query tree is determined by available tree structures in the collection of tree data structures. (section 4, "Scope-List Representation" section; figure 4, "Database D of 3 Trees")

Response to Arguments

5. Applicant's arguments with respect to claims 1-25 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. The prior art made of record, listed on form PTO-892, and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jay A. Morrison whose telephone number is (571) 272-7112. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Vo can be reached on (571) 272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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